



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,453	09/05/2003	Yuan Wu	03-SIN-092	8429

7590
Lisa K. Jorgenson, Esq.
STMicroelectronics, Inc.
1310 Electronics Drive
Carrollton, TX 75006

08/10/2007

EXAMINER

PAUL, DISLER

ART UNIT	PAPER NUMBER
----------	--------------

2615

MAIL DATE	DELIVERY MODE
-----------	---------------

08/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/656,453	Applicant(s) WU ET AL.	
	Examiner Disler Paul	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1--32 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26 is/are allowed.
- 6) ☒ Claim(s) 1;15-17;27-28;30-31 is/are rejected.
- 7) ☒ Claim(s) 2-6;7-10;12-14;29,32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/24/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,11,16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto et al.(2004/0032955 A1).

Re claim 1, Hashimoto et al. disclose of the audio processor (fig.1(2); page 4[0088] line 6-8), comprising: a virtualizer operable to process audio information to virtualize at least one speaker so that, from a listener's perspective, sounds appear to come from at least one direction where a physical speaker is not present(fig.1(2); 6-9; (31-32); page 1[0004]/virtual reproduction of surround sound); and a controller operable to configure the virtualizer, wherein the virtualizer can be configured to virtualize the at least one speaker at any location in a space around the listener (page 6[0098]; page 8[0118 line 10-12]).

Art Unit: 2615

Re claim 11, has also been analyzed and rejected with respect to claim 1 above.

Re claim 16, the device of claim 11, wherein the audio source comprises at least one of a television tuner, a radio tuner, a CD reader, and a DVD reader (fig.1(1)).

Re claim 17, the device of claim 11, wherein the audio source comprises an audio/video source operable to provide both audio and video information; and further comprising a video processor operable to process the video information (fig.24-25; page 11[0153] line 7-13/enable video and audio processing to be reproduced).

3. Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto et al.(2004/0032955 A1) and further in view of Abel ("6,668,061 B1")..

Re claim 15, the device of claim 11, wherein the audio processor is operable to virtualize numerous speakers with five physical speakers (page 1[0012 line 9-13; fig.14"). But, Hashimoto et al. fail to disclose of the specific of virtualizing the five speakers using two physical speakers, however, Abel disclose of a system wherein the specific of virtualizing the five speakers using two physical speakers (fig.2-3) for the purpose of enabling the user to enjoy the effects of

surround sound limited availability of physical speakers units. Thus, taking the combined teaching of Hashimoto et al. and Abel as a whole, it would have been obvious for one of the ordinary skill in the art at the time of the invention to incorporate the specific of virtualizing the five speakers using two physical speakers for the purpose of enabling the user to enjoy the effects of surround sound limited availability of physical speakers units.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 27-28,30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Sotome et al.(US 2003/0086572).

Re claim 27, Sotome et al. disclose of the method, comprising:
generating first output signals for a first physical speaker; and
generating second output signals for a second physical speaker;

Art Unit: 2615

wherein the first output signals emulate effects of a virtual speaker on one ear of a listener, the second output signals emulate effects of the virtual speaker on another ear of the listener (page 2[0016. line 12-17; fig.4, fig.7 (page 5[0068-9])/signals generated by each of two loudspeaker defined the virtual listening point), and each of the output signals at least partially cancels crosstalk caused by the other output signals (fig.2; page 3[0047-004833]; fig.5; page 4[0053]9).

Re claim 28, the method of claim 27, wherein generating the first and second output signals comprises: filtering one or more input signals to produce one or more filtered input signals (fig.1 (11,12); fig.15(30)); providing one or more of the filtered input signals to one or more forward crossover paths and generating the first and second output signals using one or more of: one or more of the input signals, one or more of the filtered input signals, and one or more outputs from the forward crossover paths (fig.1,15(22,23) with (L,R)).

Re claim 30, the method of claim 27, wherein the first and second output signals emulate the effects of multiple virtual speakers on the ears of the listener (fig.4,7).

Re claim 31, the method of claim 27, wherein the first and second output signals emulate the effects of multiple virtual speakers at any locations in a space around the listener (fig.2; fig.4).

Allowable Subject Matter

4. Claims 18-26 are allowed.

Claims 2-6; 7-10, 12-14,29,32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

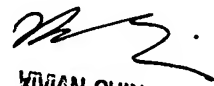
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2300